REMARKS/ARGUMENTS

Claims 1-68 have been canceled without prejudice, and new claims 69-94 have been newly added. Claims 69-94 are now pending in the application. Applicants respectfully request reexamination and reconsideration of the application.

A Restriction dated January 14, 2003 required election of one species from each of three groups of species. The first group included two species of the "method used to define a spring form": 1-A "forming a molded surface in a sacrificial material," and 1-B "forming a meniscus, and curing." The second group included eight species of "the sacrificial material": 2-A "polymethylmethacrylates," 2-B "polycarbonates," 2-C "Polyurethanes," 2-D "ABS plastics," 2-E "photoresists," 2-F "NOVOLAC resins," 2-G "epoxies," and 2-H "waxes." The third group included seven species of the "method used to deposit the layer of resilient material": 3-A "deposition from aqueous solutions," 3-B "electrolytic plating," 3-C "electroless plating," 3-D "CVD," 3-E "PVD," 3-F "spin coating," and 3-G "deposition through induced disintegration of precursors including liquid phase, solid phase, and gaseous phase precursors." Applicants elected the following species: 1-A, 2-E, and 3-B.

New claims 69-94 read on species 1-A from the first group of species. Claims 69-94 are generic to the second group of species. That is, claims 69-94 are not limited to use of any particular sacrificial material.. With the exception of claim 89, the new claims are generic to the third group of species. That is, claims 69-88 and 90-94 are not limited to any particular method of depositing the contact structure material. Claim 89, however, is directed to electroless deposition, which is a non-elected specie.

Claim 89 is therefore withdrawn, while all of claims 69-88 and 90-94 read on or are generic to the elected species. Claim 89, however, depends from claim 76 and thus is a linking claim. Upon allowance of claim 76 (or any claim upon which claim 89 is amended to depend), claim 89 should be rejoined and examined with claim 76 (or any claim upon which claim 85 is amended to depend). (See MPEP § 809.)

Claims 7, 26, 45, and 47 have been objected to or rejected under 35 USC 112, second paragraph. These claims have been canceled, mooting these objections and rejections. New claim 93 is similar to canceled claim 7 but, Applicants believe, should be acceptable to the Examiner.

Claims 1-29, 40, 41, 43-52, and 56-68 were rejected as obvious in view of US Patent No. 5,688,699 to Cunningham et al. ("Cunningham") and US Patent No. 6,406,636 to "Vaganov ("Vaganov"). Applicants respectfully traverse these rejections.

Independent claim 69 uses a stamping tool that includes a portion that is opaque to a curing stimulus and a portion that is translucent to a curing stimulus. After the stamping tool is pressed into a moldable material, a curing stimulus is directed through the stamping tool to the moldable material. The opaque portion of the stamping tool blocks the curing stimulus, so the portion of the moldable material that corresponds to the opaque portion is not cured. On the other hand, the portion of the moldable material that corresponds to the translucent portion of the stamping tool is cured. Neither Cunningham nor Vaganov teaches or suggests using a stamping tool that includes both opaque and translucent portions. Therefore, independent claim 69, as well as dependent claims 70-75, patentable distinguish over Cunningham and Vaganov, whether taken singly or in combination.

Independent claim 76 describes a method of forming conductive contact structures on conductive contact elements of an electronic component. Figure 2H illustrates a non-limiting example in which spring contacts 60 are formed on the contact pads 46 of electronic component 32. As recited in claim 76, a stamping tool is pressed into a moldable material on the electronic component. The stamping tool includes a plurality of protruding regions, contoured regions, and recessed regions. After the stamping tool is pressed into the moldable material, the protruding regions define molds for bases of the contact structures, the contoured regions define molds for beams of the contact structures, and the recessed regions define separations between adjacent contact structures. Although the invention is not so limited, the method described in claim 76 is particularly advantageous for simultaneously forming a plurality of contact structures on an electronic component. For example, the method may be used to form hundreds or even thousands of contact structures simultaneously on the terminals of the dies of an unsingulated semiconductor wafer.

Cunningham discloses forming a material that is sensitive to infrared light on an elevated platform above a semiconductor body. Vaganov teaches etching or alternatively stamping patterns in one or more semiconductor substrates to improve bonding of the two substrates one to another. No fair combination of Cunningham and Vaganov—that is, no combination that is motivated by anything other than improper hindsight—teaches or suggests a method of forming

a plurality of contact structures on an electronic component that includes pressing a stamping tool having protruding regions that define the bases of the contact structures, contoured regions that define the beams of the contact structures, and recessed regions that define separations between adjacent contact structures. Indeed, even if the Patent Office's premise that the opening 46 in mask 44 of Figure 2C in Cunningham could be formed by stamping rather than etching is accepted, there is no basis for concluding that the opening 46 should be formed using a stamping tool having a plurality of protruding regions that define the bases of the contact structures, contoured regions that define the beams of the contact structures, and recessed regions that define separations between adjacent contact structures. Therefore, independent claim 76 patentably distinguishes over Cunningham and Vaganov.

Because claims 77-94 depend from claim 76, claims 77-94 also patentably distinguish over Cunningham and Vaganov. Moreover, claims 77-94 recited additional requirements that further distinguish over Cunningham and Vaganov.

For example, claim 77 recites depositing the moldable material on the electronic component by placing the electronic component in a mold and injecting the moldable material into the mold. Neither Cunningham nor Vaganov teach or suggest such steps.

As another example, claims 82 and 83 describe the contoured regions as "ribbed" or "corrugated," respectively. Ribbed or corrugated beams have the advantage of increasing the strength of the beam without increasing the foot print of the beam. Again, neither Cunningham nor Vaganov teaches or suggests forming contact structures with ribbed or corrugated beams.

As yet another example, claim 87 includes "reentrant teeth" disposed to form a plurality of lips in said moldable material." Once again, Cunningham and Vaganov fail to teach or suggest such requirements.

Therefore, dependent claims 77-94 are patentable because they depend from claim 76, which is itself patentable, and they recite additional features that further distinguish over Cunningham and Vaganov.

In view of the foregoing, Applicants submit that all of the claims are allowable and the application is in condition for allowance. If the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 323-5934.

Respectfully submitted,

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